Session C5: Nutrient Monitoring and Modeling to Restore and Protect Coastal Water Quality

8:00 – 9:30 am | Room 233

"Hypoxia Forecast Models in Coastal Waters Used to Inform Nutrient Management"

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Abstract

NOAA administers national competitive programs aimed at assessing the causes and ecosystem impacts of coastal (including Great Lakes) hypoxia, and developing quantitative predictive models to inform coastal managers of the effectiveness of alternative management strategies for preventing or mitigating hypoxia. Development of predictive models has advanced hypoxia management capabilities in several systems where the magnitude of hypoxia is related to nutrient enrichment through anthropogenic activities, including the northern Gulf of Mexico, Narragansett Bay, Chesapeake Bay, Delaware Bay, Lake Erie, and Green Bay. Scenario-based forecast models in these regions are being used to improve the predictive understanding of the quantitative relationship between nutrient loading and hypoxic zone size, inform nutrient reduction targets to mitigate hypoxia, and monitor management progress toward achieving hypoxia mitigation through nutrient reduction. A comparison of hypoxia forecast modeling approaches and management applications in these regions will be presented, and remaining research needs to inform management decisions discussed.